

ABSTRACT

Apparatus and methods for delivery of a drug or compound into a fluid flowing within a tube or catheter. In one embodiment a catheter includes an inner surface coated with a polymer matrix such as a hydrogel. The hydrogel includes captured within it a therapeutic agent. The method of capture may be by various means, including photolabile bonds between the therapeutic agent and the hydrogel. The therapeutic agent is released from the hydrogel by the application of energy to the hydrogel, such as by a laser emitting a wavelength which resonates and breaks the photolabile bond. The released therapeutic agent diffuses out of the hydrogel into the liquid flowing within a lumen of the catheter.